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(54) Multicarrier transmission, compatible with the existing GSM system

(57) The present invention relates to a transmission method and a transmission apparatus for transmitting signals on the basis of a OFDM/TDMA-system, wherein a plurality of subcarriers being orthogonal to each other are allocated to a variable number of channels, each channel containing a variable number of subcarriers depending on information to be transmitted in said signals, wherein, for the transmission of said signals in a GSM-system having a constant number of predetermined GSM-frequency channels and a constant number of predetermined GSM-timeslots being grouped in GSM-frames, the number of said subcarriers is allocated corresponding to the bandwidth of said

GSM-frequency channels, so that a multiple of one resulting OFDM/TDMA-timeslot matches with one or a multiple of one GSM-timeslots, wherein a pilot symbol is allocated to every  $n$ -th subcarrier in said GSM-frequency-channels, whereby  $n$  is an integer and  $>1$ , and wherein said signals are transmitted.

The present invention also proposes a receiving method and a receiving apparatus for receiving corresponding signals. Thereby, a reliable channel estimate and equalization can be performed.

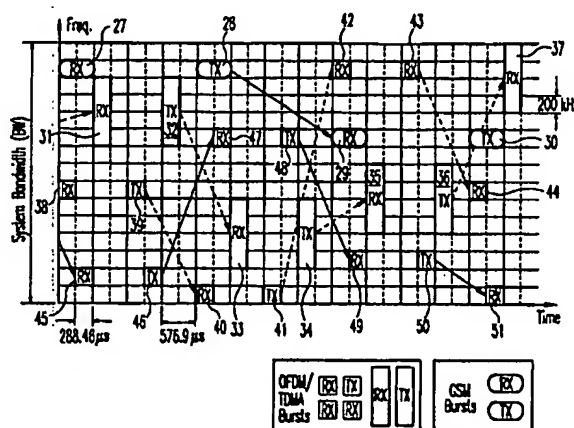


Fig. 12